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21 MAR 1968

OVERHEAD RECONNAISSANCE AND COMMUNICATION MISSION PLANNING AND ANALYSIS

ACTION COMPONENT(S):

OSP, OSA, OCS, OC

USER COMPONENT(S):

NRO, DOD, OSP, OSA, OC

OBJECTIVES:

The objectives of this project are threefold:

-- To provide computer support in mission planning and post-mission analysis for operational manned and unmanned overhead reconnaissance systems. For aircraft systems this includes the analysis of factors related to "Go, No Go" decisions relative to specific reconnaissance flights. For orbital missions computer support provides ephemeris and camera data for pre-mission, mission, and post-mission operations. To support both kinds of systems, the Agency has responsibilities for maintaining and operating a data communications network to transmit operational data between field and headquarters stations.

-- To provide computer support in analyzing planned improvement to existing overhead reconnaissance systems or new systems in various stages of development. The computer provides the tool for system designers in their examination and evaluation of the effectiveness of present systems and establishing improved performance goals for future systems. As these systems become more sophisticated and more expensive and require longer lead times, precise analysis using the computer becomes vital.

-- To provide ADP support to the Agency's program for the development of orbiting communication relay stations. Support in this area includes the generation of ephemeris, prediction of

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mutual visibility times for the transmitting and receiving stations, and the generation of signal plans and schedules.

DESCRIPTION:

A variety of computer programs are used to support the planning of manned aircraft missions, including the simulation of the aircraft in hostile environments and predicting the probability of success, and the computation of fuel consumption data and flight vectors as inputs to the overall flight plan. For orbital systems, pre-mission computer runs are made to provide counter programs for insertion in the vehicle. During missions, daily runs are made to provide data from which operational decisions can be made. In addition, computations are made for NPIC relating target points to the location on the actual photography.

Improved operational capabilities of orbiting systems and the characteristics of planned systems require that the computer be used to provide information in real-time on camera operation, target information, and orbital characteristics which enable ground stations to perform control functions for each revolution. Eventually this will lead to ADP-backed displays and data handling, possibly using computer-reconstituted imagery for further dissemination to the user.

In supporting the Agency planning and study programs in the area of utilizing satellites for improved communications capabilities, the requirement to generate supporting software systems has been established. These requirements include generation for acquisition data for the tracking stations, inputs to automatic tracking mechanisms, the generation of signal plans, and the efficient scheduling of several transmitting stations.

CHRONOLOGY:

Initiated: Prior to FY-64
Operational: Various
Operational Evaluation: Various